REMARKS/ARGUMENTS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and amended as necessary to more clearly and particularly describe the subject matter, which Applicant regards as the invention.

Claim 16 has been amended to correct typographical errors.

The Examiner rejected claims 3–9 and 10–15 under 35 U.S.C. 103(a) as being unpatentable over Catalano U.S. Pat. No. 4,845,043 in combination with Yamazaki U.S. Pat. No. 5,512,102. Yamazaki does not teach all the limitations of claims 3 and 4 for which it is cited. More specifically, Yamazaki does not teach "wherein said operation comprises a dosing of the reaction chamber with a vapour or gas comprising water, methanol, isopropanol or another alcohol" as in claim 3 or "...with a vapour gas comprising ammonia, hydrazine or volatile organic amine" as in claim 4.

First, referring to column 13, line 62 through column 14, line 7 of Yamazaki, Yamazaki teaches cleaning a substrate by introducing a simple gas, such as fluoride (NF_2), hydrogen (H_2), or nitrogen (N_2) gas and not by water, methanol, isopropnanol or another alcohol as recited in claim 3 or ammonia, hydrazine or volatile organic amine as recited in claim 4.

Second, referring to column 2, lines 42-51 of Yamazaki, Yamazaki discloses the use of a nonproductive gas and a productive gas in a deposition process. The nonproductive gas may include an inert gas such as argon, helium, neon or krypton or an oxide such as oxygen, nitrogen oxide, carbon oxide or water or a nitride such as nitrogen, ammonia, hydrazine or nitrogen fluoride. As disclosed in column 2, line 61-64 of Yamazaki, the nonproductive gas

provides energy to the productive gas during the deposition process. Thus, the nonproductive gas is not used in a decontamination process as suggested by the Examiner.

Finally, the Examiner cited column 1, lines 45–54 of Yamazaki and stated that Yamazaki discloses using hydrogen or halogen to neutralize the recombination centers to improve the device characteristics. The Examiner further cited column 2, lines 42–51 and stated that the nonproductive gas provides the hydrogen or halogen elements. The Examiner then states that Yamazaki teaches cleaning the substrate by providing active hydrogen, fluorine or chlorine to remove contaminants. Finally, the Examiner asserts that water, ammonia or hydrazine can be substituted for the hydrogen, fluorine or chlorine apparently because the Examiner believes that the nonproductive gas provides hydrogen. The Examiner's attempt at substituting the nonproductive gas (e.g. water, ammonia and hydrazine) for hydrogen, fluorine or chlorine is without merit. First, Yamazaki does not support the Examiner's assertion that the nonproductive gas provides hydrogen and halogen elements. Nowhere in column 2, lines 42–51 does Yamazaki state that the nonproductive gas provides hydrogen or halogen elements. Second, Yamazaki does not state or suggest that the nonproductive gas is used in the cleaning process. As mentioned above the nonproductive gas is used to provide energy to the productive gas during the deposition process.

Thus, Yamazaki does not teach dosing the reaction chamber with a vapour or gas comprising water, methanol, isopropanol or another alcohol as in claim 3 or with a vapour gas comprising ammonia, hydrazine or volatile organic amine as in claim 4. Therefore, Yamazaki does not teach all the limitations of claims 3 and 4 for which it is cited.

Further, there must be a basis in the art for combining references. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion, or incentive supporting the combination. *ACS*

Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The Examiner must be able to point to something in the prior art that suggests in some way a combination with another reference in order to arrive at the claimed invention. Here, the Examiner attempts to combine the decontamination method disclosed in Catalano with elements disclosed in Yamazaki to arrive at the claimed invention. First, referring to column 6, lines 39-42 of Catalano, Catalano teaches a decontamination process using fluorine or chlorine. As commonly known in the art, when using fluorine or chlorine the decontamination process is typically an etching process. In an etching process, etching elements or compounds are required. The elements of water, ammonia, hydrazine, etc., recited in claims 3 and 4 of Applicant's application are not etching elements. Thus, it would not be obvious to one of ordinary skill to use Applicant's elements in the etching process of Catalano.

In addition, referring to column 13, line 62 through column 14, line 7 of Yamazaki, Yamazaki discloses cleaning a surface of a substrate **prior** to actual deposition of a layer. The cleaning process disclosed in Yamazaki teaches a cleaning process but the cleaning process takes place before the deposition of a layer. The timing of the cleaning process of Yamazaki substantially differs from Catalano. Thus, it would not be obvious to one of ordinary skill to combine the decontamination method of Catalano with Yamazaki because the timing of the decontamination method of Catalano substantially differs from that of Yamazaki.

Therefore, the Examiner improperly combined the decontamination method of Catalano with Yamazaki.

Claims 5–9 and 10–14 depend either directly or indirectly on claim 3 and claim 15 depends on claim 4, thus, all arguments pertaining to claims 3 and 4 are equally applicable to these claims and are herein incorporated by reference.

The Examiner rejected claim 16 under 35 U.S.C. 103(a) as being unpatentable over Catalano in combination with Yamazaki as applied to claims 3–9 and 10–15 above and further in view of Bauer et al. U.S. Pat. No. 6,124,545.

Claim 16 depends on claim 4; thus, all arguments pertaining to claim 4 are equally applicable to claim 16 and are herein incorporated by reference.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 35121US1.

Respectfully submitted,
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